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Quality of Life Regarding Patients with Periodontal Disease in Iasi, Romania

Grigoras Simona [a,*] , Mârtu Silvia [a] , Balcos Carina [a]

[a] *University of Medicine and Pharmacy "Gr.T.Popa", Iasi, Romania*

Abstract

The purpose of this study was to assess the influence of periodontal disease on the quality of life in the adult population of Iasi, Romania. The study was conducted on 50 subjects aged between 24 and 68 years. The data have been gathered using clinical exams according to the WHO criteria, while for the quality of life evaluation the subjects completed the OHIP-14 questionnaire. According to the results of the study, the most affected OHIP dimensions found to be: "psychological discomfort","functional limitation" and "physical pain" among the patients, while the higher OHIP scores were recorded in patients with aggressive periodontitis. The study concluded that the periodontal disease can affect the quality of life, especially of those patients suffering from aggressive periodontitis.

Keywords: OHIP, quality of life, periodontitis, adults

* Corresponding author : Grigoras Simona, Tel (mobile): (0040)749431816
E-mail address: monique_g_21@yahoo.com

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1. Introduction

Periodontal infection and inflammation interact with many other factors experienced by adults, and they likely reduce oral function, drop quality of life, poor nutrition and increase the patients risk of developing several chronic systemic diseases. Since the consequences of periodontal disease are severe, general dentists need to help older adults preserve their periodontal health (Locker, 1988). To evaluate the quality of life we can use the Oral Health Impact Profile (OHIP) which is a multidimensional construct that reflects comfort when eating, sleeping, and engaging in social interaction; self-esteem; and satisfaction with oral health (US Department of Health and Human Services, National Institutes of Health. National Institute of Dental and Craniofacial Research, 2000).

The negative effects of periodontal disease on quality of life were reported in a great number of studies. Periodontitis can affect not only the ability to eat, speak, and socialize but also interpersonal relationships and daily activities (Löpez & Baelum, 1999; Needleman et al., 2004; Lopes et al., 2009).

In order to reduce the consequences of periodontal disease on the quality of life we have to plan and evaluate the periodontal care and treatment adequately in order to address the needs and concerns of the patients (McGrath & Bedi, 1999; Allen, 2003). As compared with simple knowledge of the effects of oral diseases on teeth and surrounding tissue, people are more likely to behave positively when they have a more comprehensive understanding of how such diseases affect their general health and quality of life (Al-Shamrany, 2006).

The aim of this study was to assess the impact of periodontal diseases on quality of life among patients with chronic and aggressive periodontitis in Iasi, Romania.

2. Material and methods

This cross-sectional study was conducted in 2012 on a random sample of 50 patients aged 25 to 68 years who had at least 20 teeth. The exclusion criteria were: 1) presence of a mental or psychological disorder, 2) need for antibiotic for the last 6 months, 3) presence of removable dentures, 4) presence of carious lesions or symptomatic oral lesions. This study was approved by the Research Ethics Committee of the "Grigore T. Popa" University of Medicine and Pharmacy Iasi and informed consent was obtained from all participants.

Data was collected using a structured questionnaire which contained information about sociodemographic and other relevant characteristics, including age, sex, years of education, personal income, self-reported history of chronic conditions, regular use of medication at the time of data collection, smoking status, frequency of brushing, and previous dental visits and periodontal treatments during the past 6 months. Participants were also asked if they had ever received a diagnosis of any chronic illnesses.

To measure the impact of periodontitis on quality of life we used the Oral Health Impact Profile Short Form or OHIP-14. This index is a reduced form of the original, containing only 14 questions divided into the same seven domains: functional limitation, physical pain, psychological discomfort, physical disability, psychological difficulty, social obstacle and social handicap (Slade, 1997; Slade, 2005). Questions are answered on a Likert scale from 0 to 4, with 0 = never, 1 = hardly ever, 2= occasionally, 3 = fairly often and 4 = very often.

All participants underwent a clinical periodontal examination by a calibrated dentist. The oral hygiene of six selected teeth and the periodontal status of all teeth, excluding third molars, were assessed using the plaque index (PI) of Loe and Silness (Loe & Silness, 1963), the gingival index (GI) of Silness and Loe (Silness & Loe, 1964) and probing pocket depth (PPD). The six selected teeth were the Ramfjord teeth, which include the maxillary right first molar, the maxillary left central incisor, the maxillary left first premolar, the mandibular left first molar, the mandibular right central incisor, and the mandibular right first premolar. Dental mirrors and explorers were used to assess plaque accumulation and gingival status, and William's periodontal probes were used to measure PPD. Six representative teeth and 2 surfaces (bucal and oral) of each studied tooth were assessed and scored for PI. PPD was measured at six sites (mesiofacial, midfacial, distofacial, and mesiolingual, midlingual, distolingual) per tooth for all teeth, excluding third molars. The number of decayed teeth (DT), filled teeth (FT), and missing teeth (MT) for each participant were recorded according to WHO criteria (World Health Organization, 1997).

The Statistical Package for Social Sciences (SPSS, version 20.0, Chicago, IL, USA) was used for data processing and data analysis. The characteristics of variables were described using frequency distribution for categorical

variables and mean and standard deviation for continuous variables. The chi-square test was used to assess associations between categorical variables. A *p* value of less than 0.05 was considered statistically significant.

3. Results

This study comprised 50 adults (31 men and 19 women) aged between 25 and 68 years, with a mean age of 48.8 (SD: 13.34) years. Their sociodemographic, clinical, and other relevant characteristics are shown in Table 1 and 2.

Table 1. Sociodemographic, clinical, and other relevant characteristics of participants

	N	%
Age (years)		
20-40	17	34.0
41-60	20	40.0
>60	13	26.0
Sex		
Male	31	62.0
Female	19	38.0
Years of education		
University	11	22.0
Highschool	12	11.0
Under 12 classes	17	34.0
8 classes	10	20.0
Family income		
Less than 500 RON	9	9.0
500-1000 RON	13	26.0
1100-1500 RON	18	36.0
1500-2000 RON	10	20.0

Table 2. Clinical and other relevant characteristics of participants

	N	%
Smoking		
Yes	31	62.0
No	19	38.0
Systemic disease		
Yes	20	40.0
No	30	60.0
Frequency of brushing/day		
< 1	6	12.0
1	33	66.0
>1	11	22.0
Frequency of dental visits		
Regular	3	6.0
Irregular	27	54.0
For pain	20	40.0
History of periodontal treatment		
Yes	17	34.0
No	33	66.0

The distribution of the 50 patients regarding to periodontal disease was 86% chronic periodontitis and 14% aggressive periodontitis. Overall, the mean number of missing teeth was 4.7, and 12.4% of participants had no missing teeth. The oral hygiene and periodontal status of participants according to age is shown in Table 3. The severity and extent of periodontal disease increased as age advanced.

Table 3. Oral hygiene and periodontal status of participants by age

	20-40 Mean (SD)	41-60 Mean (SD)	<60 Mean (SD)	Total Mean (SD)	P value
Plaque index (PI)	1.23 (0.63)	2.01 (0.33)	2.23 (0.66)	1.46 (0.47)	0.145
Gingival index (GI)	1.68 (0.47)	2.65 (0.18)	3.55 (0.23)	1.92 (0.35)	0.136
Probing pocket depth (PPD)	2.21 (0.23)	2.24 (0.92)	3.53 (0.16)	2.22 (0.77)	< 0.005

The results concerning the impact of periodontal disease on quality of life are presented in Table 4. Occasionally /Fairly often was reported on one or more items of OHIP-14 by more than half of patients with chronic periodontitis (54%) and over 60% of patients with aggressive periodontitis. There are no reported answers “very often” from both groups. Psychological discomfort was the most frequently reported complaint among participants.

All subscale scores, except that for functional limitation, significantly differed by the type of periodontal disease. The average OHIP-14 score was significantly higher in patients with aggressive periodontitis than in patients with chronic periodontitis. Patients with aggressive periodontitis had significantly higher average scores of physical pain, physical disability, social disability, and handicap subscales (Table 5).

Table 4. Distribution of responses to OHIP items for all subjects.

Characteristics	Never		Hardly ever		Occasionally		Fairly often	
	N	(%)	N	(%)	N	(%)	N	(%)
Functional limitation								
trouble pronouncing words	6	(12.0)	5	(10.0)	13	(27.0)	26	(51.0)
worsened sense of taste	8	(16.0)	6	(12.0)	16	(32.0)	20	(40.0)
Physical pain								
painful aching	11	(22.0)	6	(12.0)	9	(18.0)	24	(48.0)
uncomfortable to eat	3	(6.0)	7	(14.0)	18	(36.0)	22	(44.0)
Psychological discomfort								
self-conscious	4	(8.0)	7	(14.0)	21	(42.0)	17	(34.0)
felt nervous	3	(6.0)	5	(10.0)	15	(30.0)	27	(54.0)
Physical disability								
diet has been unsatisfactory	5	(10.0)	7	(14.0)	13	(26.0)	25	(50.0)
interrupted meals	10	(20.0)	1	(2.0)	17	(34.0)	22	(44.0)
Psychological disability								
difficult to relax	9	(18.0)	4	(8.0)	14	(28.0)	23	(46.0)
embarrassment	9	(18.0)	5	(10.0)	14	(28.0)	22	(44.0)
Social disability								
irritable with other people	7	(14.0)	5	(10.0)	15	(30.0)	23	(46.0)
difficulty doing usual jobs	7	(14.0)	5	(10.0)	15	(30.0)	23	(46.0)
Handicap								
less satisfaction	7	(14.0)	4	(8.0)	18	(36.0)	21	(42.0)
unable to function	5	(10.0)	4	(8.0)	15	(30.0)	26	(52.0)

Table 5. Analysis of differences on OHIP-14 subscales by periodontal disease

	Aggressive Periodontitis		Chronic Periodontitis	
	Mean	(SD)	Mean	(SD)
OHIP 1				
Functional limitation	0.62	(1.10)	0.42	(0.50)
OHIP 2				
Physical pain	3.27	(1.90)	0.46	(0.50)
OHIP 3				
Psychological discomfort	1.71	(1.59)	0.54	(0.50)
OHIP 4				
Pshysical disability	1.59	(1.54)	0.10	(0.30)
OHIP 5				
Psyhological disability	1.59	(1.54)	0.28	(0.45)
OHIP 6				
Social disability	1.55	(1.57)	0.22	(0.42)
OHIP 7				
Handicap	1.78	(1.66)	0.12	(0.33)

Furthermore, the average score for patients with aggressive periodontitis was higher than that for patients with chronic periodontitis.

4. Discussion

Periodontal disease is one of the two major dental diseases that affect human populations worldwide at high prevalence rates. The prevalence and severity of periodontal disease have been measured in population surveys in several developed and developing countries, and these studies were carried out with a wide range of objectives, designs, and measurement criteria.

This study examined 50 patients with aggressive periodontitis and chronic periodontitis.

Several methods have been developed to study the distribution of periodontal diseases in a population. These methods are usually used to determine both the occurrence of periodontal diseases and the associated conditions in the community. For each or more than one of the periodontal conditions there is an index that is specifically designed to score the presence and/or extent of each condition of interest.

The OHIP-14 is the most widely used instrument for evaluating the adverse impact of oral conditions on well being. Ng & Leung (2006), Drumond-Santana et al. (2007), Jowett et al. (2009) and Araújo (2010) used the OHIP-14 to assess the impact of periodontal disease on QoL. Another measure used to study periodontal disease and QoL is the OHQoL-UK instrument (Needleman et al., 2004).

Overall, periodontal disease had a negative impact on QoL. This finding is in agreement with that reported by Ng & Leung (2006). The impact of periodontal diseases on patient QoL was moderate in some domains, mainly physical pain and psychological disability. Ng and Leung (2006) reported a perceived impact on the domains of physical pain and psychological disability, and studies using the OHQoL-UK measure also reported a perceived impact on physical domains (Needleman et al., 2004; Lopes et al., 2009).

We found that the severity of periodontal disease was not significantly associated with functional limitation subscales. In contrast, Ng and Leung (2006) & Araújo et al. (2010) reported that oral health had a considerable impact on functional limitation.

The average OHIP-14 score was significantly higher in patients with aggressive periodontitis than in patients with chronic periodontitis. Patients with aggressive periodontitis had significantly higher average scores for the physical pain, physical disability, social disability, and handicap subscales.

These findings are consistent with those of other studies (Drumond-Santana et al., 2007; Locker et al., 2004). However, because the study participants were selected from patients referred to our Department of Periodontology, it is reasonable to assume that they had more oral-health complaints, as compared with a normal population, and were more health conscious.

For reducing the discomfort caused by the disease we recommend to achieve a preventive, therapeutic and maintenance treatments with periodic checks.

Periodontal disease had a negative impact on quality of life, and this impact was greater in patients with severe periodontal disease. These findings have significant implications in periodontal disease assessment, planning, treatment, and subsequent evaluation of periodontal care. Related quality of life assessment can be used for periodontal preventive community programs in order to reduce the prevalence of periodontal diseases.

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